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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,496	03/16/2004	Audeen Richetto	1730.002US1	1874
21186 7590 08/13/2008 SCHWEGMAN, LUNDBERG & WOESSNER, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402				
EXAMINER VERBITSKY, GAIL KAPLAN				
ART UNIT 2855		PAPER NUMBER		
MAIL DATE 08/13/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/801,496

Applicant(s)

RICHETTO ET AL.

Examiner

Gail Verbitsky

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/309)
Paper No(s)/Mail Date 5/12/08 03/03/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Invention III, claims 19-27 in the reply filed on 05/12/2008 is acknowledged.

Claim Objections

Claims 22-23, 26, 40 are objected to because of the following informalities:

Claim 22: there is no means providing the difference in voltage has been claimed.

Claims 22 and 40: it has been held that an element is "adapted" or "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute limitations in any patentable sense. In re Hutchinson, 69 USPQ 138.

Claims 23, 26: "A.S.T.M." makes the claim language confusing because it is not clear what applicant means. In addition, abbreviation is not allowed in the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19-21, 23-26, 31-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malek (U.S. 2530256) in view of Kreizman et al. (U.S. 6117088) [hereinafter Kreizman] (and Jones (U.S. 4998341)).

Malek discloses in Fig. 4 a device in the field of applicant's endeavor wherein the first thermocouple junction is formed from the first and second thermocouple conductors and the second thermocouple junction is formed from the second and third thermocouple conductors. Malek teaches that the junctions are sealed from the atmosphere by using a mastic/ rubber mass sealed to (embedding) the junctions. It is inherent that, in order to seal, the mass should be heated and at least slightly melted.

Malek does not explicitly teach that the seal is a heat shrinkable and that it is a polymer sealant.

Kreizman discloses in Figs. 1D, 1E, 5B a device in the field of applicant's endeavor comprising a plurality of spaced thermocouples (array) which can be connected, as claimed by applicant: at least first and second thermocouple junctions, wherein the first thermocouple junction is formed from the first and second thermocouple conductors and the second thermocouple junction is formed from the second and third thermocouple conductors. Kreizman teaches a heat shrinkable sheet 46 which is adhered to array. Kreizman teaches that heat shrinkable sheet could be used instead of elastic material, such as rubber (mastic).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the mastic/ rubber material of with the heat shrinkable material, because Kleizman teaches the invention in the field of applicant's endeavor and states that they could be replaceable.

For claims 23, 26: it is very well known in the art that thermocouples could be types T, J, K, E, S, R, and B. (see, for example, Jones (U.S. 4998341) who teaches states that thermocouples could be type K, N, T, J, E.

With respect to claims 33, 34, 38, 39: the use of the particular material, i.e., PET, FEP for the polymer seal, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made

Art Unit: 2855

using routine experimentation would have found obvious to provide for the polymer seal disclosed by Thermos since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

With respect to claims 21 and 31: having the particular junction shape of the particular height and width, as stated in claims 21 and 31, absent any criticality, is only considered to be the "optimum" size/ shape that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the thermocouples, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

With respect to claims 32-33: having the particular length of first thermocouple junction together with polymer, as stated in claim 32-33, absent any criticality, is only considered to be the "optimum" size that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the thermocouples, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

Claims 19-21, 23-26, 31-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thermos et al. (U.S.6354735) [hereinafter Thermos] in view of JP 04015530 [hereinafter JP] (and Jones (U.S. 4998341)

Thermos discloses in Fig. 3 a device comprising a plurality of thermocouples, inherently including their hot junctions. The device also comprising a meltable silicone (heat shrinkable polymer), when heated, the wire internally seals the areas within a jacket/ catheter along the length sealing the jacket to the thermocouples and thus to the hot junctions. the device has a terminal board 30 for reading thermocouples data.

Thermos does not explicitly teach that the first thermocouple junction is formed from the first and second thermocouple conductors and the second thermocouple junction is formed from the second and third thermocouple conductors.

JP discloses a device in the field of applicant's endeavor wherein the thermocouples are connected in series (including 3 hot junctions), as shown in Fig. 1 and as claimed by applicant.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Thermos so as to have thermocouples connected in series because the particular connection of the thermocouples, absent any criticality, is only considered to be the "preferred" or "optimum" electrical connection that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the device, etc.

For claims 23, 26: it is very well known in the art that thermocouples could be types T, J, K, E, S, R, and B. (see, for example, Jones (U.S. 4998341) who teaches states that thermocouples could be type K, N, T, J, E.

With respect to claims 33, 34, 38, 39: the use of the particular material, i.e., PET, FEP for the polymer seal, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the polymer seal disclosed by Thermos since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

With respect to claims 21 and 31: having the particular junction shape of the particular height and width, as stated in claims 21 and 31, absent any criticality, is only considered to be the "optimum" size/ shape that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine

Art Unit: 2855

experimentation based, among other things, on the intended use of the thermocouples, etc. **See In re Boesch, 205 USPQ 215 (CCPA 1980).**

With respect to claims 32-33: having the particular length of first thermocouple junction together with polymer, as stated in claim 32-33, absent any criticality, is only considered to be the "optimum" size that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the thermocouples, etc. **See In re Boesch, 205 USPQ 215 (CCPA 1980).**

Claims 22, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothi et al. (U.S. 6323413) [hereinafter Roth] in view of Pavoni et al. (U.S. 5906584) [hereinafter Pavoni] and Thermos.

Rothi discloses a device adapted to be fit in catheter such as covered with a coating/ layer/ microtubing/ inner layer 24 made of a polymer (PTPE, FEP, Kynar). The coated thermocouple wires are bonded to a first/ inner layer 20 made of PTFE or FEP and a second layer 22.

Rothi does not teach a meltable heat shrinkable polymer to seal the thermocouple junctions. Roth is silent so as the device comprises at least three terminations of the at least three thermocouple conductors, and wherein a difference in voltage at the thermocouple junctions available at the at least three terminations indicates a difference in temperature along the length of the catheter.

Pavoni discloses a device in the field of applicant's endeavor wherein thermocouples 5 have socket 9 (Fig. 7) connected to measuring device. It is inherent that each thermocouple would indicate temperature/ voltage corresponding to its location, and data from all thermocouples would be easily indicative of the temperature/ voltage difference if any.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Rothi so as to have

three or more thermocouple connectors, as taught by Pavoni, in order to allow the operator to measure voltage of each thermocouple separately, and thus, to use the thermocouples for measurements temperature of different zones at the same time.

Thermos discloses in Fig. 3 a device comprising a plurality of thermocouples, inherently including their hot junctions. The device also comprising a meltable silicone (heat shrinkable polymer), when heated, the wire internally seals the areas within a jacket/ catheter along the length sealing the jacket to the thermocouples and thus to the hot junctions. The device has a terminal board 30 for reading thermocouples data.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Rothi so as to have meltable heat shrinkable polymer to melt, shrink and seal the thermocouples within the jacket, as taught by Thermos in order to protect the thermocouples from harsh environment.

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thermos and JP as applied to claims 19-21, 23-26, 31-39 above and further in view of Holzl (U.S. 3343589).

Thermos and JP disclose the device as stated above.

They do not explicitly teach the limitations of claims 27-30.

Holzl teaches that thermocouple hot junctions usually made by soldering of fusion welding of two metals. Holzl also states that fusion (fuse) welding is fragile. This would imply that when it broken, the thermocouple wires become disconnected and the thermocouple is no longer acting as a thermocouple.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Thermos and JP, so as to have the thermocouple wires soldered to each other having a fusion/ fuse, as taught by Holtz, because it is very well known in the art to make a thermocouple junction by soldering.

Claims 22, 40 rejected under 35 U.S.C. 103(a) as being unpatentable over Thermos and JP, as applied to claims above and further in view of Pavoni.

Thermos and JP disclose the device as stated above.

They do not explicitly teach that the device comprises at least three terminations of the at least three thermocouple conductors, and wherein a difference in voltage at the thermocouple junctions available at the at least three terminations indicates a difference in temperature along the length of the catheter.

Pavoni discloses a device in the field of applicant's endeavor wherein thermocouples 5 have socket 9 (Fig. 7) connected to measuring device. It is inherent that each thermocouple would indicate temperature/ voltage corresponding to its location, and data from all thermocouples would be easily indicative of the temperature/ voltage difference if any.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Roth so as to have three or more thermocouple connectors, as taught by Pavoni, in order to allow the operator to measure voltage of each thermocouple separately, and thus, to use the thermocouples for measurements temperature of different zones at the same time.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571/ 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gail Verbitsky
Primary Patent Examiner, TC 2800

July 14, 2008

/Gail Verbitsky/
Primary Examiner, Art Unit 2855

